

Notice of Allowability

Application No.

10/733,959

Examiner

Michael Le

Applicant(s)

ABDO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the after final amendment filed November 20, 2006.
2. ☒ The allowed claim(s) is/are 2-4, 6-8 and 12-14.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


DON WONG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

DETAILED ACTION

Allowance

1. Claims 4 and 8 were previously allowed in the Final Office Action mailed November 2, 2006.
2. Claims 1, 5 and 9 are cancelled.
3. Claims 2, 3, 6, 7 and 12-14 are allowed.

Reasons for Allowance

4. Claims 2, 3, 6, 7, 12 and 13 were allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in the Final Office action mailed November 2, 2006, and to include all of the limitations of the base claim and any intervening claims. In addition, claim 13 was only allowable if it is also rewritten to overcome the rejection under 35 U.S.C. 101, set forth in the Final Office action.

5. Claim 14 was allowable if rewritten to overcome the rejections under 35 U.S.C. 101 set forth in the Final Office action.

6. Applicant's amendments to claims 2, 3, 6, 7 and 12-14 are acknowledged as they address the issues mentioned above. Accordingly, claims 2, 3, 6, 7 and 12-14 are allowed.

7. The closest prior art of record is Burger (US Patent Pub 2004/0059743) and AAPA (Figures 6 and 8 of the instant invention). Additional analysis of the closest prior art with respect to the instant invention was made in the Final Office action when indicating allowable subject matter and is not included here for the sake of brevity. Although Burger and AAPA are the closest prior art, they fail to disclose or suggest the subtracting function recited in claims 2, 6 and

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12. Thus, the novel feature of the invention is the subtracting function, which is utilized to account for data skew.

8. Claims 3, 7, 13 and 14 recite the use of a formula for estimating cardinality of an intermediate dataset when data skew is present. The closest prior art is Applicant's admitted prior art (AAPA) shown in Figures 6 and 8 of the instant invention. The difference between the AAPA and the formula recited in the claims is that the formula recited in the claims accounts for data skew while the prior art formula assumes a uniform distribution. In the First Non-Final Office action, claims 2, 3, 6, 7 and 12-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Burger (US Patent Pub 2004/0059743) in view of AAPA. Burger discloses a method of query optimization, which utilizes gathered statistics of a data set to detect data skew and using the gathered statistics to generate an optimized query plan (Burger: para. 0019, 0023). Although directed toward solving the same problem, Burger does not expressly disclose the formula recited in the claims.

9. Lohman et al. (US Patent Pub 2002/0198867) hereinafter "Lohman", is also close prior art. Lohman discloses a method of query optimization where statistics, such as cardinality, are gathered to determine data skew. The information is then used to aid the query optimizer in selection a more optimized query plan (Lohman: para. 0018, lines 6-14; para. 0028, lines 4-7; para. 0049, lines 4-13; para. 0050, lines 1-5). Lohman, however, does not disclose or suggest the subtracting function or the specific formula recited in the claims.

Computer Readable Program Product

10. The computer readable program product recited in claims 12-14 is allowed on the basis that the computer readable program product only consists of recordable type media as defined in the Specification on page 11, lines 22-24, and does not include transmission type media. This interpretation is made clear by Applicant's remarks in the After Final amendment when addressing the rejection under 35 U.S.C. 101. Therefore, claims 12-14 are allowed on the basis that the computer readable program product includes the recordable media and the software components recited in the claim, but does not include transmission type media.

11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

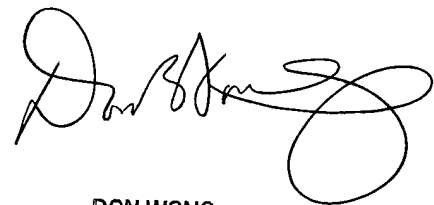
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Le whose telephone number is 571-272-7970. The examiner can normally be reached on Mon-Thurs : 9:30am-6pm, Fri: 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Le
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May 22, 2006

A handwritten signature in black ink, appearing to read 'Don Wong', with a large, stylized loop at the end.

DON WONG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100